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A STUDY OF THE RELATIONSHIP OF GEOLOGICAL FORMATION TO THE  
NORM

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#### ABSTRACT

Naturally Occurring Radioactive Materials (NORM) is a common and costly contaminant of produced waters associated with natural gas production and exploration. One way of combatting this problem is by identifying the problem beforehand. Our approach to this problem involves development of NORM prediction capabilities based on the geological environment.

During quarter thirteen of this project, work has continued under the recently approved revisions. We are also in the final stages of sample acquisition from new sampling sites.

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#### EXECUTIVE SUMMARY:

The Southern University Center for Energy and Environmental Studies along with partners Louisiana State University's Basin Research Institute (BRI), and the U.S. Geological Survey (USGS) have teamed up to explore relationships between geological and radiological factors (NORM). Each of these partners will employ their specific areas of expertise in developing predictive capabilities with respect to NORM in the produced waters associated with natural gas exploration.

#### PROJECT INTRODUCTION:

This project is to consist of three major tasks: (1) Radiological Analysis, (2) Correlative Results with Respect to NORM Activity and geological parameters (Geo-environmental maps), and (3) Technology Transfer.

The radiological and minor chemical analysis of samples are taking place at Southern University with the geo-environmental results being generated at Louisiana State University.

#### RESULTS AND DISCUSSION:

During this reporting period, efforts were geared towards acquiring samples from selected sampling sites of a major oil corporation and shifting the project tasks to meet the newly approved revisions and negotiating project changes with a subcontractor. The appropriate methods, etc., continue to be updated and/or modified.

#### CONCLUSION:

We are currently negotiating with a major oil corporation for access to sampling sites and are anticipating a February date for sample acquisition. Negotiations with the project sub-contractor have tentatively been completed. Major tasks associated with the project are in progress and on a schedule to meet the new project ending date.